

Before the
Federal Communications Commission
Washington, D.C.
February 28, 2003

REPLY COMMENTS OF THE HARRIS CORPORATION

FCC Proceeding 02-135

Spectrum Policy Task Force

Introduction

The Harris Corporation is pleased to file Reply Comments on the Commission's Spectrum Policy Task Force Report under proceeding 02-135. Harris has reviewed the Report as well as the previously filed comments and presents herein our Reply Comments in this proceeding.

Harris is a pioneer in the development of Digital Television Broadcast technology and is leading manufacturer of Communications equipment including Broadcast Transmitters, Microwave Communications Systems, Satellite based systems and Tactical Radio Communications Systems providing assured communications solutions. Harris has a

long and distinguished history in the development of innovative communications technology and has broad RF competence covering 100 kHz to 100 GHz systems.

Harris supports the Commission’s goal of promoting access to and increased utilization of the radio spectrum. Harris generally supports the Commission’s proposals to evolve its spectrum policy toward a market oriented regulatory environment. Harris strongly believes, however, that no single Spectrum Usage Model is applicable to all bands and that, in the future the optimum regulatory environment will include a combination of “Command and Control”, “Exclusive Use” and “Commons” access models.

Issues

- Harris enthusiastically supports measures to improve licensing flexibility to reduce barriers to spectrum utilization.
- We believe that future spectrum management planning should be technology-neutral to permit the introduction of new technologies with minimal regulatory effort.
- Advances in technology will evolve and meet the challenge of increasingly crowded spectrum allocations.

- The rights and responsibilities of all spectrum users must be clearly defined under any new Spectrum Use Model with respect to:
 - Designated frequency range and bandwidth;
 - Geographic scope of the right to operate;
 - Maximum RF output, both in-band and out-of-band; and
 - Interference protection, i.e. The maximum level of noise/interference that the spectrum user must accept from other RF sources.

- Over time, harmonization of regulations – particularly in North America – will result in lower costs to the users as well as promoting seamless operation in public wireless systems. As many commercial wireless systems have global application, it is desirable to ultimately evolve towards a globally coordinated regulatory environment.

- Harris suggests a review of the concept of paired-band licensed allocations given the emergence of advanced link technologies such as TDD that can result in link cost and spectrum utilization advantages.

- Harris commends the Commission in their unrelenting efforts to continue to improve the accuracy of their public license databases. The currently available data is in use throughout the industry, providing a valuable resource to manufacturers and licensees. Further improvements in the accuracy of this

information will result in more widespread applications and will thus serve the public interest.

- Harris is strongly opposed to any means in which uncoordinated transceivers would be given access to currently licensed spectrum. We believe that licensed operators must be afforded the maximum protection from interference so as to maintain high levels of system reliability. This is particularly important in this day of heightened security to maintain our Homeland Security.
- Harris supports the principle of an “Interference Temperature” specification at the receiver to the extent that it increases the potential density of licensed links using standard link planning techniques.
- As previously stated, however, Harris is strongly opposed to the use of this approach to enable independent, uncoordinated transmitters to generate intentional interference within range of a licensed link. Any regulatory process that serves to raise the noise floor in a licensed allocation will cause a reduction in system gain and a corresponding loss in system availability to the licensee. It is our opinion that the public will not be served if the availability of critical radio links is reduced with no clear means of mitigation. Harris expresses concern that future deployment of Ultra Wideband (UWB) systems could raise interference levels over a wide range of frequencies and could reduce the availability of licensed point-to-point systems.

- In pursuit of appropriate specifications for interference noise temperature, Harris agrees that better data regarding noise floor is required and that a standard method for measuring noise floor should be established.
- Harris supports the principle of a public/private partnership for long term noise (interference temperature) monitoring. This data should be made available to the public.
- Harris supports the introduction of receiver performance standards, as we believe that uniform receiver performance will facilitate coordination of new systems and result in lower interference levels and maximum spectrum reuse.
- Harris has employed Automatic Transmitter Power Control (ATPC) for many years. ATPC has proven to be a valuable tool to reduce interference levels, increase spectral reuse, along with improving the reliability of High Frequency systems. We propose, however, that further study is needed before developing new ATPC regulations for new systems. It is our belief that overly restrictive ATPC regulations will result in limited public benefit with an excessive increase in product cost.
- Harris is concerned that there may be unanticipated and undesirable interactions in radio systems that implement ATPC in an environment in which uncoordinated

transceivers are allowed to operate, even when those transceivers are designed to operate below a specific power density threshold. We believe that the issues of Noise Temperature and ATPC regulation must be considered together in order to resolve potential technical conflicts.

- Harris supports future regulations that would reduce out-of-band emission limits over time. As in the case of ATPC, this process must be introduced without imposing undue cost penalties on equipment. Harris supports a regulatory framework that separates allocations for systems employing disparate spectrum usage, as it is believed that this will reduce the technical limitations and simplify equipment designs resulting in cost savings.
- Distributed broadcast transmission and receiver sensitivity regulation can result in more efficient use of Broadcast spectrum. Harris supports the concept of Single Frequency Broadcast Networks. It is our belief that these networks can result in much higher spectrum reuse as well as lower levels of out-of-band interference.
- Harris questions the viability of the Task Force proposal to co-location of high power broadcast transmitters. Although co-location of transmitters will result in more equally distributed coverage patterns from competing stations, this proposal presents a considerable (and unnecessary) cost burden for those broadcasters who may be forced to relocate their transmitters.

- Harris supports the establishment of increased unlicensed band usage in the context of the principles included below:
 - Licensed spectrum must continue to be protected from unlicensed systems;
 - UWB system standards must not interfere with licensed spectrum users;
 - Separation of systems employing disparate spectrum users.

- Harris strongly believes that the FCC should remain in control of all licensed spectrum allocations.

- Harris supports the establishment of an FCC/IRAC interface that will facilitate workable compromises for experimental applications and also supports the appointment of an advocate/ombudsman for the private sector.

- Harris considers the FCC's current ULS process to be sufficient for the management of spectrum, which if naturally evolved over time with improvements in technology, would not warrant moving spectrum management to new systems such as "third-party" band management.

- Harris supports the principle of hybridizations with wireline delivery to enhance service. We believe that further study is required to determine the most appropriate combination of wireless and wireline technologies.

- Harris is opposed to any endeavour, such as the pursuit of secondary markets, if it will result in an increase of interference levels within licensed spectrum segments.
- As previously stated in our filed comments in proceeding 02-146¹, Harris enthusiastically supports future rulemakings for terrestrial use above 50 GHz.
- Harris supports a regulatory framework that will:
 - Permit broad, highly flexible use within the technical parameters of a particular allocation.
 - Permit licensees to lease excess capacity to other services.
 - Foster broadcast technologies and applications that will result in uniform signal strength throughout a service area.
 - Consider user fees to stimulate improvements in efficiency – *only with careful regard to their impact on operational costs.*
 - Conduct periodic evaluation of allocation parameters in the context of evolving technology and public use.
 - Support time-limited spectrum rights and subject these rights to periodic review.
 - Every 5 to 10 years, conduct a review of spectrum rights and obligations, interference criteria, and definitions with appropriate modifications.

¹ *Allocations and Service Rules for the 71-76, 81 – 86 and 92 – 95 GHz bands.*

- Maintain constant rule framework between periodic reviews.
- Licensees, after making significant investments in network deployment, should have high renewal expectancy.
- Ensure that the Commission has sufficient resources to independently monitor and enforce spectrum management rules, including a possible increase in statutory forfeiture authority.
- Move towards interference-limited policies – *where deemed appropriate*.

Conclusion

Harris considers the issues set forth in Spectrum Policy Task Force to be essential to future management of the electromagnetic spectrum. Our position is that of a major equipment supplier and we endorse all means that will result in efficient and equitable spectrum allocation and permit maximum autonomy for licensees to determine the highest valued use of their spectrum.